

Male Transvestite Prostitutes and HIV Risk

ABSTRACT

Human immunodeficiency virus (HIV)-1, syphilis, and hepatitis B prevalence and associated risk factors were assessed among male transvestite prostitutes. Structured street-level interviews were conducted with 53 respondents in Atlanta, Ga, from July 1990 through July 1991. Test results from serum samples revealed that 68% were seropositive for HIV-1, 81% had seromarkers for syphilis, and 80% had seromarkers for hepatitis B. Univariate logistic regression analysis indicated that seromarkers for syphilis and Black race were the primary factors associated with HIV-1 infection. The results show that transvestite prostitutes are a heterogeneous population and distinct from nontransvestite prostitutes; specific outreach is thus needed. Targeted interventions should address the sexual and drug-use-related HIV risk behaviors of transvestite prostitutes. (*Am J Public Health*. 1993;83:260-262)

Kirk W. Elifson, PhD, Jacqueline Boles, PhD, Ellen Posey, MA, Mike Sweat, PhD, William Darrow, PhD, and William Elsea, MD, MPH

Introduction

Male transvestite prostitutes are a specific subgroup of prostitutes found in major urban areas throughout the world and may represent a distinct high-risk category for human immunodeficiency virus (HIV)-1 infection. These transvestite prostitutes typically adopt an exaggerated female appearance and demeanor and often solicit with female prostitutes; some customers are unaware that the transvestite prostitutes are male. Preliminary reports based on small samples in Israel¹ and Brazil² suggest that seroprevalence rates for HIV-1 among transvestite prostitutes may be substantially higher than among their nontransvestite counterparts. The objectives of this paper are to (1) determine HIV, syphilis, and hepatitis B infection rates among a sample of transvestite prostitutes; (2) determine the relationship of these rates to crack use and receptive anal sex; and (3) identify risk factors for HIV-1.

Methods

Fifty-three transvestite prostitutes were recruited in the three areas of Atlanta, Ga, where they solicit clients. Targeted sampling—which includes both social mapping and snowball sampling—was used to identify the major solicitation areas and the demographic composition of the transvestite prostitutes working in those locations.³ We used social mapping to identify the three geographic areas in which solicitation took place and the demographics of the transvestite prostitute population. Within these three areas, snowball or chain-referral sampling was employed as a recruitment strategy. Individuals at the zero stage (those initially contacted) were selected randomly and were asked to refer the researchers to other transvestite prostitutes. We initiated six chains to increase the representativeness of the sample.

Of the 54 transvestites who were approached for an interview, only one declined. After informed consent was obtained, street-level interviews were conducted with the remaining 53 transvestite prostitutes, and blood samples were

collected by venipuncture, during a 12-month period in 1990 and 1991. Serum samples were tested for HIV-1 antibody by enzyme immunoassay (Genetic Systems), with confirmation by Western blot assay, and for seromarkers for hepatitis B (anti-hepatitis B surface antigen, anti-hepatitis B core antigen, and hepatitis B surface antigen tests) and for syphilis (rapid plasma reagin, microhemagglutination-*Treponema pallidum*, and fluorescent treponemal-antibody absorption tests). The county health department offered serological test results, posttest counseling, and medical referral to study participants.

Statistical relationships between the behavioral variables of crack use and receptive anal sex and the serological test results were assessed using the chi-square test and, where appropriate, Fisher's Exact Test. We used univariate logistic regression analysis to identify the risk factors for HIV-1.

Results

Participants ranged in age from 17 to 43 years (median age was 25 years), and more than 80% of the transvestites studied were Black. This reflects the demographic composition of transvestite prostitutes in the Atlanta area that was indicated by our targeted sampling procedure. Serological test results (Table 1) revealed that, overall, 68% were seropositive for HIV-1, 79% had seromarker for syphilis, and 76% had seromarker for hepatitis B. In contrast, we reported that, of 152 nontransvestite male prostitutes in Atlanta in 1988 and 1989, 27% had antibodies to HIV-1, 22% had

Kirk W. Elifson, Jacqueline Boles, and Ellen Posey are with the Department of Sociology at Georgia State University. Mike Sweat is with the Division of HIV/AIDS, and William Darrow is with the Division of STD/HIV Prevention at the Centers for Disease Control. William Elsea is with the Fulton County Health Department. All are in Atlanta, Ga.

Requests for reprints should be sent to Kirk W. Elifson, PhD, Department of Sociology, Georgia State University, Atlanta, GA 30303.

This paper was submitted to the *Journal* February 3, 1992, and accepted with revisions June 30, 1992.

TABLE 1—HIV-1, Syphilis, and Hepatitis B Seropositivity Rates among 53 Male Transvestite Prostitutes and Their Relationship to Crack Use and Receptive Anal Sex

	Serological Status			Total (No.) (n = 53)
	HIV-1 + (n = 36)	Syphilis + (n = 42)	Hepatitis B + (n = 40)	
Crack use ^a				
Yes	81%	88%	84%	66% (31)
No	56%	63%	60%	34% (16)
P	.0765	.0508	.0751	
Receptive anal sex				
Yes	70%	83%	80%	87% (46)
No	57%	57%	71%	13% (7)
P	.5118	.1217	.6054	
Total sample	68%	79%	76%	100%

Note. P values correspond to the χ^2 test for association between characteristics and serostats.

^aSix participants did not answer this question.

TABLE 2—Univariate Logistic Regression Model of HIV Risk Factors for 53 Male Transvestite Prostitutes

	Univariate Effect			
	Regression Coefficient	SE	Odds Ratio	95% CI
Race ^a	1.798*	0.79	6.0	1.2, 28.4
Ever used crack ^a	1.175	0.68	3.2	0.9, 12.3
Engaged in receptive anal sex within past 10 years ^a	0.539	0.83	1.7	0.3, 8.7
Syphilis seropositivity	3.912*	1.12	49.9	5.5, 449.1
Hepatitis seropositivity	0.700	0.69	2.0	0.5, 7.8

^aThe reference category for race is White; the reference category for crack use and for receptive anal sex is "no."

*Significant at .05.

seromarkers for syphilis, and 58% had seromarkers for hepatitis B.⁴

HIV infection rates among transvestite prostitutes who engaged in receptive anal sex were 70%, compared with 57% among those who did not report this behavior (not significant). The HIV seropositivity rates for those who used crack (81% HIV+) and those who did not (56% HIV+) are consistent with an earlier report of an association between crack-related sexual behavior and HIV-1 infection in female prostitutes.⁵ In contrast to subjects in earlier studies of HIV-1 infection in female prostitutes in Atlanta,⁶ few transvestite prostitutes (6%) in our sample ever injected drugs. One of the three study participants who reported using drugs intravenously within the past 7 years was HIV-1 seropositive.

Factors significantly associated with HIV-1 infection (univariate logistic regression analysis) among the transvestites included seromarkers for syphilis (odds ratio

[OR] = 49.9; 95% confidence interval [CI] = 5.5, 449.1) and Black race (Table 2). Black transvestite prostitutes were more likely to be HIV-1 positive (75%) than Whites (33%) (OR = 6.0; 95% CI = 1.2, 28.4). The use of crack cocaine ever was marginally significant (OR = 3.2; 95% CI = 0.9, 12.3). Eighty-three percent of the men with a history of syphilis and 73% of the men with seromarkers for hepatitis B were seropositive for HIV-1 (data not shown). Contrary to our expectations, neither receptive anal sex nor having a seromarker for hepatitis B were statistically related to HIV-1 status.

The transvestite prostitutes in our sample were more likely to engage in receptive anal sex with their clients (77%) than with their steady partners (47%). The majority (95%) of the respondents reported sometimes using a condom with a client, as compared with 76% who reported sometimes using a condom with their steady partner when engaging in re-

ceptive anal sex. Regardless of frequency, the use of condoms was not significantly related to HIV status in any of our analyses.

Discussion

The transvestite prostitutes' high rate of HIV-1 infection shows the importance of including them in studies of HIV-1 and sexually transmitted disease infection. Sexual activity possibly related to crack cocaine or other drug use, and unprotected intercourse with infected partners who may have genital ulcer diseases, may place these prostitutes at risk for HIV-1 and other sexually transmitted diseases. Our results also indicate that transvestite prostitutes are more likely to engage in receptive anal sex with their clients than with their steady partners. They more frequently report sometimes using condoms with clients than with steady partners, suggesting that they might be primarily at risk for HIV infection because of their sexual activities with their steady partners. Similar findings have been reported for female prostitutes.⁷

Tailored intervention efforts are needed to address the specific risk factors among this population. Transvestite prostitutes are stigmatized because of their mannerisms and dress, and they generally avoid contact with public health agencies. They are a heterogeneous population requiring interventions that reflect their patterns of drug use and sexual behaviors. Outreach workers need to make contacts in the locales where these transvestites socialize or solicit. □

Acknowledgments

This research was supported by grant U64/CCU402972 from the Centers for Disease Control, Division of HIV/AIDS.

Special thanks go to Drs. L. Doll and C. Sterk-Elifson for their assistance throughout the project, and to J. Misra for her analysis of the data.

References

1. Modan B, Goldschmidt R, Rubinstein E, et al. Prevalence of HIV antibodies in transsexual and female prostitutes. *Am J Public Health*. 1992;82:590-592.
2. Castello-Branco L, Carvalho M, Castilho E, Pereira H, Pereira M, Galvao-Castro B. Frequency of antibody to human immunodeficiency virus (HIV) in male and female prostitutes in Rio de Janeiro, Brazil. Presented at the Fourth International Conference on AIDS, June 12-16, 1988; Stockholm, Sweden.
3. Waters J, Biernacki P. Targeted sampling: options for studying hidden populations. *Soc Probl*. 1989;36:416-430.

4. Elifson K, Boles J, Sweat M, Darrow W, Elsea W, Green R. Seroprevalence of human immunodeficiency virus among male prostitutes. *N Engl J Med.* 1989;321:832-833.
5. Sterk C. Cocaine and HIV seropositivity. *Lancet.* 1988;1:1052.
6. Leonard T, Sacks J, Franks A, Sikes RK. The prevalence of human immunodeficiency virus, hepatitis B, and syphilis among female prostitutes in Atlanta. *J Med Assoc Ga.* 1988;77:162-164, 167.
7. Antibody to human immunodeficiency virus in female prostitutes. *MMWR.* 1987;36:157-161.

ABSTRACT

One hundred fifty-seven fifth-grade students in 20 of the 355 elementary schools in one Texas county were systematically observed during physical education classes. On average, the students spent 8.5% of class time in moderate to vigorous physical activity, 23.3% in minimal activity, and 68.1% in sedentary activity. None of the schools averaged 20% of class time in moderate to vigorous physical activity. The levels of physical activity observed are substantially lower than the levels called for in national health objectives. (*Am J Public Health.* 1993;83:262-264)

The Physical Activity of Fifth-Grade Students during Physical Education Classes

Bruce G. Simons-Morton, EdD, MPH, Wendell C. Taylor, PhD, MPH, Sharon A. Snider, MPH, and Iris W. Huang, MS

Introduction

Childhood physical activity is positively associated with a range of beneficial childhood health and fitness outcomes.¹ Childhood activity also has potential for fostering attitudes, skills, and habits that may increase the likelihood of regular exercise during adulthood,²⁻⁸ although the link between childhood and adult physical activity is not well established.⁷

National health objectives call for increasing the proportions of children obtaining regular physical activity and participating in daily school physical education classes.^{9,10} Currently, children obtain 20% to 40% of their physical activity at school,^{3,11} but many children are physically active only during physical education classes.¹¹ Because more than 80% of all students are enrolled in such classes,³ the nation's public schools potentially can provide the nation's youth with regular physical activity and foster participation in such activity outside of school and later in life. Accordingly, a national health objective calls for physical education classes to engage students in physical activity, preferably in lifetime activities such as tennis and jogging that may conveniently be engaged in by adults, for at least 50% of class time.^{9,10}

The purpose of this research was to determine the type of activities and the amount of moderate to vigorous physical activity fifth grade students participated in during physical education classes in a regional sample of schools.

Methods

Excluding 14 schools with special students or programs, the 355 elementary schools from the 20 school districts in one

large Texas county were eligible for the study. Stratifying by district size, we randomly sampled 20 schools, including 8 of the 157 schools in the 1 large school district, 8 of the 160 schools in the 10 medium-sized school districts, and 4 of the 38 schools in the 9 small school districts. Consent to conduct the research during the 1991 spring semester was obtained from school district officials.

Sample-size calculations based on pilot data called for a sample of eight classes per school to characterize the semester's activity. For each student observed, a trained interviewer directly entered into a notebook computer the student's sex, activity intensity, type of activity, whether the student was "on task" or "off task," and instructional mode. Observations were entered every 20 seconds for 5 minutes, after which the observer had 1 minute to randomly select a new subject.

The activity intensity categories had been validated previously against measured heart rates.¹² Sedentary activity involved no weight transfer; minimal activity involved nonstrenuous arm, leg, and trunk movement, such as stretching; moderate to vigorous

At the time of the study, the authors were with the University of Texas Health Science Center at Houston, Center for Health Promotion Research and Development. Bruce G. Simons-Morton is now with the National Institute of Child Health and Human Development, Bethesda, Md.

Requests for reprints should be sent to Bruce G. Simons-Morton, EdD, MPH, Prevention Research Branch, Division of Epidemiology, Statistics, and Prevention Research, National Institute of Child Health and Human Development, 6100 Executive Blvd N, Room 7B05, Bethesda, MD 20892.

This paper was submitted to the *Journal* October 28, 1991, and accepted with revisions September 22, 1992.